

## AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

### **Listing of Claims:**

1. (currently amended) An imaging system for use in medical intervention procedure planning, comprising:

a medical scanner system configured for generating a volume of cardiac image data;

a data acquisition system configured for acquiring the volume of cardiac image data;

an image generation system configured for generating at least one viewable image from the volume of cardiac image data;

a database configured for storing information from said data acquisition and image generation systems;

an operator interface system configured for managing at least one of said medical scanner system, said data acquisition system, said image generation system, and said database;

a post-processing system configured for analyzing the volume of cardiac image data and displaying the at least one viewable image and being responsive to said operator interface system, said post-processing system is further adapted to display a geometric marker at an anatomical landmark;

wherein said operator interface system comprises computer executable instructions stored in a memory for using the volume of cardiac image data and the at least one viewable image in at least one of a bi-ventricular pacing planning, an atrial fibrillation planning, and an atrial flutter planning procedure; and

wherein said operator interface system comprises computer executable instructions stored in a memory for using the volume of cardiac image data and the at least one viewable image in location and navigation of an interventional tool in a 3D space of a cardiac chamber corresponding to the volume of cardiac image data.

2. (original) The imaging system of Claim 1, wherein said medical scanner system comprises at least one of a CT system, a MR system, an Ultrasound system, a 3D Fluoroscopy system, and a PET system.

3. (original) The imaging system of Claim 1, wherein said database includes storage for storing image data of at least one of a right atrium, a left atrium, a left ventricle, and a coronary sinus.

4. (original) The imaging system of Claim 1, wherein said database includes storage for storing the at least one viewable image of at least one of the right atrium and the coronary sinus.

5. (original) The imaging system of Claim 1, wherein said operator interface system includes instructions for segmenting the volume of cardiac image data for viewing at least one of a right atrium, a left atrium, a left ventricle, and a coronary sinus.

6. (original) The imaging system of Claim 5, wherein said operator interface system includes instructions for viewing the at least one viewable image in different planes.

7. (original) The imaging system of Claim 5, wherein said post-processing system includes instructions for performing vessel tracking of the coronary sinus from the volume of cardiac image data.

8. (original) The imaging system of Claim 7, wherein said instructions further include instructions for performing vectorial vessel tracking along the centerline of the viewable image of the coronary sinus.

9. (cancelled)

10. (cancelled)

11. (currently amended) [[The]] An imaging system of Claim 10 for use in medical intervention procedure planning, comprising:

a medical scanner system configured for generating a volume of cardiac image data;

a data acquisition system configured for acquiring the volume of cardiac image data;

an image generation system configured for generating at least one viewable image from the volume of cardiac image data;

a database configured for storing information from said data acquisition and image generation systems;

an operator interface system configured for managing at least one of said medical scanner system, said data acquisition system, said image generation system, and said database;

a post-processing system configured for analyzing the volume of cardiac image data and displaying the at least one viewable image and being responsive to said operator interface system;

wherein said operator interface system comprises computer executable instructions stored in a memory for using the volume of cardiac image data and the at least one

viewable image in at least one of a bi-ventricular pacing planning, an atrial fibrillation planning, and an atrial flutter planning procedure;

wherein said operator interface system comprises computer executable instructions stored in a memory for using the volume of cardiac image data and the at least one viewable image in location and navigation of an interventional tool in a 3D space of a cardiac chamber corresponding to the volume of cardiac image data;

wherein said post-processing system is adapted to display the at least one viewable image in at least one of a three-dimensional surface rendering, a three-dimensional inner surface rendering, a three-dimensional volume rendering, a three-dimensional segmented model view, MPVR, MIP, curved reformat, lumen view, and an immersible view;

wherein said post-processing system is further adapted to display a viewable image of at least one of the heart, a coronary sinus, a left ventricle, a left atrium, and a right atrium;

wherein said post-processing system is further adapted to display a geometric marker at an anatomical ~~or external~~ landmark.

12. (original) The imaging system of Claim 11, wherein said post-processing system is further adapted to display a viewable image of the coronary sinus in a translucent fashion and the geometric landmark in an opaque fashion.

13. (currently amended) The imaging system of Claim ~~[[10]]~~ 1, wherein:

said post-processing system is adapted to display the at least one viewable image in at least one of a three-dimensional surface rendering, a three-dimensional inner surface rendering, a three-dimensional volume rendering, a three-dimensional segmented model view, MPVR, MIP, curved reformat, lumen view, and an immersible view;

said post-processing system is further adapted to display a viewable image of at least one of the heart, a coronary sinus, a left ventricle, a left atrium, and a right atrium; and,

said post-processing system is further adapted to display a first image of at least one of the heart, coronary sinus, left ventricle, left atrium, and right atrium in one of a translucent fashion and an opaque fashion while a second image of the coronary sinus is displayed in one of the translucent fashion and opaque fashion opposite the first image.

14-45. (canceled)

46. (currently amended) ~~[[The]]~~ An imaging system of claim 1 for use in medical intervention procedure planning, comprising:

a medical scanner system configured for generating a volume of cardiac image data;

a data acquisition system configured for acquiring the volume of cardiac image data;

an image generation system configured for generating at least one viewable image from the volume of cardiac image data;

a database configured for storing information from said data acquisition and image generation systems;

an operator interface system configured for managing at least one of said medical scanner system, said data acquisition system, said image generation system, and said database;

a post-processing system configured for analyzing the volume of cardiac image data and displaying the at least one viewable image and being responsive to said operator interface system;

wherein said operator interface system comprises computer executable instructions stored in a memory for using the volume of cardiac image data and the at least one viewable image in at least one of a bi-ventricular pacing planning, an atrial fibrillation planning, and an atrial flutter planning procedure;

wherein said operator interface system comprises computer executable instructions stored in a memory for using the volume of cardiac image data and the at least one viewable image in location and navigation of an interventional tool in a 3D space of a cardiac chamber corresponding to the volume of cardiac image data; and,

wherein the post-processing system is configured for: creating a 3D model from the volume of cardiac image data; inserting at least three geometric markers into the 3D model of the volume of cardiac image data at corresponding anatomical landmarks; and, storing in the database the 3D model of the volume of cardiac image data with the inserted at least three geometric markers and corresponding anatomical landmarks for subsequent visualization, analysis and registration, for use in the location and navigation of the interventional tool.

47. (previously presented) The imaging system of claim 46, wherein the operator interface system is configured to facilitate registration of the 3D model with an interventional system using the at least three geometric markers and corresponding anatomical landmarks, a centerline of a vessel used for vessel tracking, or both the at least three geometric markers and the centerline of the vessel used for vessel tracking.